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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,225	06/28/2001	Yvon Pellegrin	1512-37	2775

466 7590 02/26/2004

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EXAMINER

KITOV, ZEEV

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/831,225	PELLEGRIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Zeev Kitov	2836	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 6, 8, 9 is/are pending in the application.
- 4a) Of the above claim(s) 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 6, 8, 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

Examiner acknowledges a submission of the Amendment, Substitute Specification and Arguments filed on 12/01/2003. The Substitute Specification is approved. Claim 7 is deleted; Claims 1 and 3 are amended. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 - 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moslehi (US 5,184,398) in a view of Fruitger (US 5,452,177). Regarding Claim 1, Moslehi discloses many elements of the claim including multiple circular electrodes (Fig. 2) arranged in pairs and supplied with alternative polarity pulses (Fig. 8, col. 8, lines 55 - 67). As to arrangement of electrodes in pairs, it is seen from cyclic patterns in Fig. 8, that voltages of adjacent electrodes (Ve2 and Ve4, Ve6 and Ve8 in Fig. 8) have mutually opposite polarities and the sequence is periodically repeated. So at any moment at least one electrode pair holds the wafer. It further disclose an electrically insulating soleplate on which wafer is arranged; it is a thin layer of insulating material

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covering electrodes (col. 4, lines 58 – 61). However, it does not disclose inverters cyclically inverting a polarity of the electrode voltage. Fruitger discloses the electrostatic wafer clamp, in which inverters cyclically generating a polarity of the voltage and therefore, the voltage difference between electrodes. Its three-phase voltage generator (element 110 in Fig. 8, col. 10, lines 20 - 42) performs its function as inverter (col. 15, line 67 – col. 16, line 1). Accordingly, it provides a potential difference between the electrodes (see Fig. 9 and 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Moslehi solution by adding the inverter generated three-phase clamping voltage according to Fruitger, because as Fruitger states (col. 11, lines 24 –29), in three-phase system some clamping force remains even when one phase is lost.

Regarding Claims 2 and 3, Moslehi discloses the electrodes being concentric rings and being centered concentric relative to the center of the soleplate (Fig. 2, col. 4, lines 34 – 45). As to electrodes being concentric with respect to the center, it is seen in Fig. 2 pattern.

Regarding Claim 4, Moslehi discloses electrodes having the same surface area (col. 5, lines 28 – 33).

Regarding Claim 5, Moslehi discloses a surface of contact between the wafer and the adhesion device (chuck) having geometric variations, such as contact terminals. The surface of contact between the wafer and the chuck has geometric variations formed by contacts (electrodes) shown in Fig. 1, 3 and 5a.

Regarding Claim 8, Moslehi discloses each electrode being split in two. It is seen from cyclic patterns in Fig. 8, that voltages of adjacent electrodes (Ve2 and Ve4, Ve6 and Ve8 in Fig. 8) have mutually opposite polarities and the sequence is periodically repeated. So electrodes carrying voltages Ve2 and Ve4, Ve6 and Ve8 are obtained as a result of the split.

2. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moslehi in a view of Fruitger and further in a view of Hongoh et al. (US 5,179,498).

As per Claim 9, in addition to limitations of Claim 1 rejected accordingly, it introduces a new requirement of frequency of commutation of the electrodes being between 0.01 Hz and 1Hz. Hongoh et al. disclose frequency of commutation of the electrodes between 0.01 Hz or and 1 Hz (0.5 Hz, col. 5, lines 34 – 41). Both reference patents have the same problem solving area, namely design of electrostatic chucks. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used frequency of commutation of about 0.5 Hz according to Hongoh et al., because as Hongoh et al. state (col. 5, lines 34 – 47), such low frequency is a result of experimental optimization; a particular frequency selection results in a maximum chucking force, while preserving a fast dechucking (unloading) process.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moslehi in a view of Fruitger and Blake et al. (US 5,436,790) and further in a view of Japanese

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Patent publication JP 09265833 A. Claim 6 in addition to limitations of Claim 1 rejected accordingly, requires the electrodes and the dielectric layer of the chuck being made by serigraphy of thick films on a base plate.

Blake et al. disclose the electrodes of the chuck as being formed by a screen-printing (elements 22 and 24 in Fig. 3, col. 2, lines 67 – 68, col. 3, lines 1 – 5). Japanese Patent publication discloses forming both electrodes and dielectrics by screen-printing (page 2, lines 1 – 4). Both patents have the same problem solving area, namely forming electrodes and isolative dielectrics. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use forming of electrodes and dielectric layers by screen printing according to Blake et al. and Japanese Patent publication, because as JP 09265833 states (page 2, lines 1 – 4), the screen printing method provides good accuracy of the forms.

### ***Response to Argument***

Applicant Arguments have been given careful consideration, but they are moot in a view of a new ground of rejection.

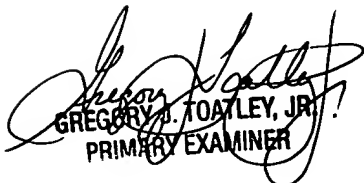
### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeev Kitov whose current telephone number is (571) 272 - 2052. The examiner can normally be reached on 8:00 – 4:30. If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272 – 2800, Ext. 36. The fax phone number for organization where this application or proceedings is assigned is (703) 872-9306 for all communications.

Z.K.  
02/16/2004

  
GREGORY J. TOATLEY, JR.  
PRIMARY EXAMINER